

matrix component  $T_{ij}$  is represented by single-stranded oligomers comprising a dimeric oligomer sequence of the form  $5'-A-B-3'$  selected from the group consisting of  $5'-\{E_i\}\{E_j\}-3'$ ,  $5'-\{E_i\}\{E_j\}-3'$ ,  $5'-\{E_i\}\{E_j\}-3'$ , and  $5'-\{E_i\}\{E_j\}-3'$ , and wherein the concentrations of said dimeric oligomers  $T_{ij}$  are proportional to the absolute values of the amplitudes of the matrix components they represent;

(b) obtaining a set of single-stranded oligomers  $E_i$  and  $E_j$  representing the components of a vector  $V$ , wherein the concentrations of said oligomers  $E_i$  and  $E_j$  are proportional to the absolute values of the amplitudes  $V_i$  of the vector components they represent; and

(c) obtaining a set  $S$  of single-stranded oligomers  $E_i$  and  $E_j$  having the sequences of the A portions of those dimeric oligomers representing matrix  $T_{ij}$  which also comprise in their B portions sequences which are either the same as or complementary to the oligomers representing said vector  $V$ ,

wherein the set of single-stranded oligomers  $S$  is an analog representation of the inner product of said matrix  $T$  and said vector  $V$ .

#### REMARKS

Treatment (a) recited in claim 11 is amended to: (a) changing the relative concentrations of the oligomers in said composition, and claims 14 and 16 are replaced by new claims 27 and 28 which recite the same subject matter as claims 14 and 16 in simpler, clearer terms.

Support for the amendment of claim 11 is found in on page 30, lines 22-24, of the specification. Amendment to recite changing the "relative" concentrations of the oligomers in the composition relates to multiplying a vector represented by oligomers present in a mixture with other oligomers representing vectors that are not being multiplied, such that the

concentration of the oligomers representing the vector being multiplied is changed relative to the concentrations of oligomers that are not being multiplied.

Claims 14 and 16 are canceled and are replaced by new claims 27 and 28, respectively, which are directed to essentially the same methods as claims 14 and 16, and which more clearly state the critical features of said methods than do claims 14 and 16 which they replace. Support for new claim 27 is found on pages 31-33, lines 22-24, which describes a method for obtaining an inner product of two vectors. Support for new claim 28 is found on pages 36-39, which describes a method for obtaining the product of a matrix and a vector.

The Examiner is invited to contact the undersigned Applicant's representative if she thinks that an interview would be helpful in clarifying any issues associated with the prosecution of this application.

Respectfully submitted,

*Charles C. P. Rories*

Charles C. P. Rories (Reg. No. 43,381)  
for John W. Schneller (Reg. No. 26,031)  
VENABLE

P.O. Box 34385  
Washington, D.C. 20043-9998  
Telephone : (202) 962-4800  
Direct Dial: (202) 962-4046  
Telefax : (202) 962-8300

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Dc2docs1# 187827

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